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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,695	08/28/2001	Roman S. Dabrowski	003300-823	4445
7590 04/21/2004			EXAMINER	
Benton S. Duffett, Jr. BURNS, DOANE, SWECKER & MATHIS, L.L.P. P.O. Box 1404 Alexandria, VA 22313-1404			DUONG, TAI V	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/939,695	Applicant(s) DABROWSKI ET AL.	
	Examiner Tai Duong	Art Unit 2871	<i>Aw</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 10-69 is/are rejected.
- 7) ☒ Claim(s) 3,8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/21/01</u> . | 6) <input type="checkbox"/> Other: _____ |

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Applicant's election of Species C (claims 38-49 and 63) in Paper dated 01/14/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Generic claim 1 contains allowable subject matter. Since the election of species requirement, as set forth in Paper mailed on 09/25/03, was conditioned on the nonallowance of the generic claim(s), **the election of species requirement is hereby withdrawn**. In view of the withdrawal of the election requirement, applicant(s) are advised that if any claim(s) depending from or including all the limitations of the allowable generic claim(s) be presented in a continuation or divisional application, such claims may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 4-7 and 10-69 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 1 and 64-69 are indefinite because they are inconsistent with the specification disclosure. The specification discloses that in order for the orthoconic

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AFLC to be uniaxial negative or to present a negative birefringence, a *horizontal tilt plane condition* is necessary. Therefore, it is unclear how the liquid crystal material of the liquid crystal device having the structure as recited in claim 1, claim 64, claim 65 or claim 69 can be uniaxial negative or have a negative birefringence. In addition, it is unclear how the liquid crystal *material* of claim 66, claim 67 or claim 68 by itself (without any other means) can be uniaxial negative or have a negative birefringence. Claims 4-7 which depend on claim 1 are also not consistent with the specification disclosure. The specification discloses that the AFLC material is uniaxial only when the smectic tilt angle θ is 45 degrees. For angles other than 45 degrees, the AFLC material is biaxial (uniaxial *approximation*). It is noted that "is uniaxial" is not the same as "is approximately uniaxial (which is still biaxial)". In claim 64, it is unclear to which embodiment or figure the recited feature "an AFLC material having a *molecular tilt angle in an anticlinic state that is selected such that the extinction in said black state is substantially insensitive to a smectic layer orientation in different liquid crystal domains in the device*" is directed. Therefore, the above feature of claim 64 is not understood. The remaining claims are also rejected since they depend on the indefinite claims.

Claims 3, 8 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 3 is allowable over the prior art of record because none of the prior art discloses or suggests a liquid crystal device having the feature "the AFLC material is (negative) uniaxial as a consequence of

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said surface stabilization and of a selected smectic tilt angle of said AFLC material".

Claims 8 and 9 are also allowable because they depend on claim 3.

Claims 1, 65 and 69 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. Claims 1, 65 and 69 would be allowable over the prior art of record because none of the prior art discloses or suggests a liquid crystal device having an AFLC material (smectic anticlinic material) being uniaxial negative, or an AFLC material which is confined between two substrates and which is switchable between, on the one hand, a biaxial negative state having the axis corresponding to the smallest principal value of refractive index directed perpendicular to said substrates and, on the other hand, two biaxial positive states having the axis of the largest principal value of refractive index oriented parallel to the substrates.

Claims 2, 4-7 and 10-63 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claim 64 is not indicated as allowable over the prior art of record because its intended scope is not understood.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takatori et al disclose an AFLC device with continuous grayscale.

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Any inquiry concerning this communication should be directed to Tai Duong at telephone number (571) 272-2291.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



TVD

04/04



TOANTON
PRIMARY EXAMINER